1:Srinivas E-5 (1940-42)1952 AW5 Coorg AW5

132 brings very heavy rainfall to the Western Ghats generally, and Coorg is no exception to the rule. The monsoon is most severe in July, and thereafter it gradually diminishes till it finally comes to a stop towards the end of September.

The north-east monsoon, lasting from November till January, does not compare with the south-west monsoon in the amount of rain it brings, nor does it affect all parts of Coorg uniformly. Only the eastern and south-eastern parts are markedly affected by it.

Coorg, for its size, shows enormous variation in the amount of rainfall received in different parts, some parts like Voṭékolli receiving as much as 250 inches annually, while others like Fraserpēṭ receive only 41 inches annually. Mercara and Vīrarājpēṭ receive annually 131 and 110 inches respectively. Mercara is the normal seat of the government, but during the monsoon it is replaced by Fraserpēṭ.

The year is divided into three seasons, cold, hot, and rainy. The cold season lasts from December to the beginning of March, the hot from March to the beginning of June, and the rainy from June till the middle of December. September marks the end of the severe south-western monsoon, and November the beginning of the north-eastern monsoon, and in between the two there is an uncertain respite from rain.

The climate of Coorg shows regional variation, the eastern and northern parts resembling the climate of Mysore, while Coorg Proper[1] is damper and cooler than Mysore. In Mercara the average temperature for the year is 66·6°. In the monsoon the daily mean temperature is 65° with a daily variation of 15°, while in winter the same daily mean temperature has a greater range of daily variation with 24°, and in the hot season the daily mean temperature of 70° has a variation of 25°. The lowest temperature in winter is 50°, while the maximum reached in summer is 82°. Mercara, however, is a little cooler than the rest of Coorg owing to its comparatively high elevation (3,809 feet).

137 The flora of Coorg does not vary much from the flora of the rest of south India. Very dense forests, containing useful timbers, clothe the sides of the mountains everywhere. In the east the more level tracts are covered with clumps of bamboo interspersed with other trees, some of them timbers. The precious sandalwood tree also grows in this area.

[1] See p. 7 for the meaning of 'Coorg Proper'.

1:Srinivas E-5 (1940-42)1952 AW5 Coorg AW5

137 The cardamom grows in the deep and damp recesses of the evergreen forests on the Western Ghats. Many varieties of beautiful ferns and the useful rattan cane creeper and *vōṭé* reeds are also found close to the mountain streams flowing in these forests.

136 Coorg fauna is the same as that of the rest of south India. In its forests are found elephant, tiger, bison, panther, boar, bear, porcupine, deer, and wild dog and jackal. The extensive clearing of the mountain-sides for coffee and orange plantations, the general love of hunting, and the possession of firearms have resulted in the decimation of wild life in Coorg.

II

131 The isolation and inaccessibility of Coorg, with its steep mountains, dense forests, and heavy rainfall, contributed to the maintenance and elaboration of the distinctive mode of life and culture of Coorgs. The Lingāyaṭ Rājas, who saw certain political and military advantages in the natural isolation of Coorg, tried to increase it. Richter tells us that they closed down certain roads leading to Mercara, and prohibited travelling by them.[1]

But under British rule the existing roads were improved and new ones were built. Nowadays buses run regularly on all the main roads connecting different parts of Coorg with each other, and Coorg with her neighbours. Yet even now no railway line passes through Coorg and this restricts the amount of contact it has with the rest of India.

The isolation of Coorg in the past was far from absolute. Contact always did exist with neighbours, though such contact was limited and difficult. For instance, Coorgs in south-west Coorg went annually in caravans to Malabar to sell their surplus rice, and to buy jaggery,[2] coconuts, coconut oil, tobacco, and areca-nuts. Coorgs in south-east Coorg bought cattle in Mysore and went on pilgrimages to certain shrines like the Shrikaṇṭēshwara Temple in Nanjanagūḍ. Coorgs in central and north Coorg went on pilgrimages to the Subrahmaṇya Temple in South Canara.

184 Though Coorg is a very small country, it shows considerable cultural diversity. The areas to the north and east of Mercara, and

[1] Op. cit., p. 426.

[2] Crude brown sugar, either in the form of square blocks or small round cakes, made from sugar-cane juice or the saps of various palms.

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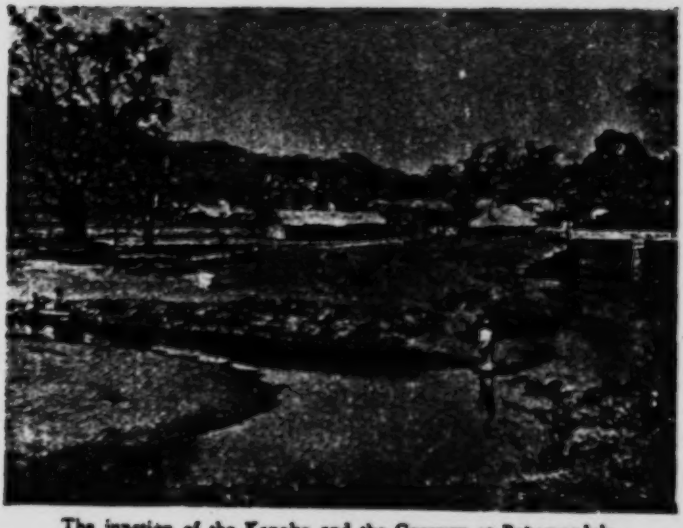
A View of Talai Cauvery



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The junction of the Kanaka and the Cauvery at Bajamandala

[facing p. 2]

133 ridges branching off from this part of the Ghats, the most remarkable is the one which attains the greatest height in the double peaked Kotebetta (5,375 ft.) situated 9 miles north of Mercara. Near Mercara the Benguad [491] Range starts west of the Ghats forming an acute angle with them. At this point is Brahmagiri, the source of the Cauvery river, and north of it is the Sampaji valley through which descends the road to Mangalore on the west coast. Continuing on the line of the Ghats which runs south-east from here, the most important peaks are the well-wooded Tumbemala, Lakkutappa, Devarabetta, Tadiandamol (5,729 ft.), and Somamala. Some distance to the south is the Periambadi ghat road to Cannanore and Tellicherry on the west coast. In the extreme south-west is the Marenad Range with the great lateral range of the Brahmagiris, which form the southern boundary of the country, separating it from Wynad. The highest peak in this range is Devasibetta (4,500 ft.) which towers up from a beautiful plateau called Huyalemale. Many spurs from the Brahmagiris branch off over the whole of Kiggatnad, producing a ramification of narrow ridged hills, some ascending in almost solitary grandeur like Ambatebetta near Virarajendrapet, Bittangala, and Kundadabetta, others subsiding into the undulating slopes of the eastern elevations, enclosing innumerable rice fields, some of which are the most extensive in Coorg. The Benguad Range also extends eastwards in two ridges south of Mercara. One culminates in the pointed peak of Nurokkalbetta, the other takes a zigzag line towards Fraserpet, its highest point being Kallurbetta, clothed with teak forests. From Kotebetta northwards runs the Santhalli hills, terminating in the bluff Mukribetta. From the northern frontier a range runs south to the Cauvery, in which are the fine conical peak of Malambi (4,468 ft.) and the Kanagalu hill.

137 Coorg was primarily well wooded, and although a vast tract was [245] cleared for coffee cultivation, it still conveys this impression, when one has a general view of it from the summit of a hill. In many parts of Coorg (South) impenetrable evergreen forests and bamboo jungles have a luxuriant growth. Towards the east and north, the country varies from the park-like tracts of Yelusarasime to the bare grass hills of Yedavanad and the thick deciduous jungle that fringes the Cauvery. The sandal tree 133 is found in abundance in the north-eastern parts. On a bright November [137] morning, an observer from the heights of Brahmagiri is in rapturous delight at the picturesque view that opens out before him. Ridge after ridge of grassy or forest-clad hills appear, now gently sloping down in wavy lines, now bold and abrupt, now raising their steep summits into the clear blue air. Kudaremukhabetta bursts into view from Canara, the Bettadapur and Chamundi hills in Mysore, the Wynad mountains of Malabar, and even the distant range of the Nilgiris are clearly visible, while in the west at a distance of about 30 miles below

INTRODUCTION

the steep precipices of the Ghats are the coast line of Malabar and South Canara, intersected by broad, bright, serpentine rivers, and beyond, the dark blue Indian Ocean, dotted with sailing craft. The eastern frontier between the Cauvery and Lakshmana rivers exhibits an almost uninterrupted jungle inhabited by the Kurumbar, Lambani, and other wandering tribes. 133

River Systems

Coorg is well favoured with rivers and streamlets which give it an abundant and perennial water supply throughout the year except South Coorg where there is a dearth of it. Though perennial, they are not remarkable for their breadth. Of the rivers that flow eastward, the most important are the following:—

The Barapole, rising in the Brahmagiris with its tributary the Kallhole descending from the Heggala pass; the Udormbi, the Yeramakuth, the Cadiamale, and the Mundrotu rivers from the Padinalkanad Range. The Yertakarti and Nujikal rivers descend from the Pattighat, and the Maringundi river from the Pushpagiri Range.

Rivers of the eastern watershed consist of the Cauvery and its tributaries. The Cauvery has its source at Talai Cauvery near Bagamandala and is the largest and most important river in Coorg. Its tributaries are the Ramathirtha and the Lakshmanathirtha, both of which rise in South Coorg and join the Cauvery in the Mysore Province. The Kakkabe, Kadanur, Muttarmudi, and Chickle rivers, all of which assume considerable dimensions during the monsoon, rise in Padinalkanad and Mercara taluks, while the Hatti, Nadapur and Choran rivers from the Harangai river, and powerful tributaries rise in Nanjarajapatna taluk.

Flora

The flora of Coorg is typical of the prevailing vegetation throughout the Western Ghats. According to Conner, every species of vegetation attains a high degree of luxuriance, if not rankness, quite foreign in the neighbouring countries. Both flowers and blossoms have a brilliancy and variety unknown in the plains, and many of the wild plants possess a share of aromatic qualities both as to odour and flavour. The all-prevailing forest is distinguished by the people as Male-kadu (evergreen mountain forest), and the Kanave-kadu (deciduous growth at the lower levels of the passes). Arborescent growth at higher elevations varying from 3,500 feet is mostly represented by Vateria indica, Canarium strictum, Calophyllum tomentosum, Michelia champaka, Polyalthia coffeoides and others. 137

Fauna

Elephants range throughout all parts of Coorg. They frequent the forests towards the eastern frontier. They are not so numerous as before. 136

3:Iyer E-5 (no date) 1948 AW5 Coorg AW5

ed a passage to the immigrants from Malabar. From the above facts, it may be gathered that they were not an unmixed race. The house names of some of the Coorg families indicate Mysore, Tulus or Tamil origin. Their language, demon and ancestor-worship do tend to show that they belong to the Dravidian. Their traits are biologically useful and related to mental capacity and intellectual endowment. Their mountain habitat, climate, food and occupation are responsible for what they are at present, and these factors have differentiated them from the people of the plains. 174

Habitation

The Coorg houses are like those of the Nayars of Kerala. They are situated by the side of their paddy fields on a sheltering slope of Bane-land, surrounded by plantain trees, bastard sago, orange, jack and guava trees. A coffee garden and a small plot of land for the growth of vegetables are not absent on the Hittelmandala land. There is a small pond well stocked with fish. The position and type of building bear an analogy to those of the Nayars of Kerala. The approaches to the Coorg house strongly mark the design of fortification, and tradition goes back to a time of general feuds, when chief fought against chief and clan with clan. Deep trenches with high embankments are visible memorials to the warlike state of affairs in days gone by. These trenches intersect the mountainous district in every direction. 351 342 [171] [137] [245] [712]

A deeply cut passage paved with rough stones and overgrown with shady trees, its sloping side walls decked with a variety of ferns, leads one in angular lines to a doorway passing under an outhouse. Houses are located in the midst of their plantations remote from the public gaze. A paved courtyard is surrounded by stables, store rooms, and servants' quarters, in front of which is the main quadrangular building which has one storey and is raised about three feet from the ground. All the buildings are roofed with bamboo and thatched with rice straw which is annually repaired and renewed. There is an open square hall in the centre known as batte or nundumane, the four sides of which are provided with rooms for the inmates to occupy. In front of the building there is an open verandah which is the reception hall. It is raised and covered with a wooden plank almirah two or three feet broad, so as to form convenient seats for the male members and visitors. From it rise three or four wooden pillars square, round and tapering, and sometimes carved. The floor is well beaten with mud and cleaned with cowdung. The ceiling is of wood, arranged in small compartments. In some, the verandah is separated from the inner hall by a wall with a sort of window or lattice made of wood. It is a contrivance intended for the benefit of the Coorg women who are curious to see visitors. On the right side of the verandah there is a main [824] [356] 342 [232]

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A typical Coorg in his smart attire

Amma Coorg Male Group

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An Amma Coorg House

[facing p. 65]

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

133 and the whole length of the instep by the Mysore boundary. Compared with the gigantic extent of the Indian Peninsula, Coorg is but of baby's size, however large it may appear to its inhabitants.

[103] As the Badaga people on the Nilagiris have been named Burghers, so is "Coorg" anglicised from Kodagu or Kodumale, a name which it has borne from the remotest ages and which in its meaning—"Steep mountains" graphically depicts the character of this remarkable alpine land.

2. General description of Coorg,

its mountains and their formation, its rivers and their course, its forests and their general flora and fauna.

Aspect of Coorg. Standing on a bright November morning on the summit of the Brahmagiri near Tala-Kávéri, (tale *Kg.* head) the observer is filled with delight and admiration of the grand and picturesque view, that opens out before him. As far as the eye can reach to the north-west and south-east it beholds ridge after ridge of grassy or forest-clad hills, now gently sloping down in gentle wavy lines, now bold and abrupt, raising their steep summits into the clear, blue air. Kudure-mukha-betta, the far seen landmark of the mariner, bursts into view from Canara; the Bettadapur and Chámundi hill in Mysore, the Wynád mountains of Malabar and Dodda-betta of the distant Nilagiris are clearly visible, and in the west at a distance of about 30 miles below the steep precipices of the Ghats the coast-line of North Malabar and South Canara, intersected by broad, bright, serpentine rivers and the dark-blue Indian Ocean with its sailing craft fascinate the spectator.

[137] Coorg itself is covered by forest, save here and there where the clearing of a coffee plantation or ragi patch or the park-like open glades (Báné) with their beautiful green sward and varied foliage afford a charming variety to the landscape.

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

Felspar is very common, and yields a rich soil. Veins of it are laid bare along the banks of the Ghat roads. In many places it is reduced to a white powder, the kaolin or porcelain clay, with which marketable chunam is adulterated. Mica is frequently seen, and here and there the roads glitter with its shining scales. After heavy showers the water channels along the sides of roads which had been metalled with syenite, appear covered with a sparkling blackish sand, the hornblende of the decomposed syenite. Common quartz occurs most frequently in small pieces of uncrystalline form. The considerable amount of carbonate of lime in the ashes of the Matti tree, (Terminalia coriacea) a tree largely distributed all over the eastern parts of Coorg, proves the presence of limestone in the soil of that region.

Mines there are none in Coorg, and it would appear, that except traces of iron in the shape of oxydes no metals exist. The gold ore, which a certain adventurer recently claimed to have discovered in Coorg, proved to be only mica embedded in quartz.

Rivers and their course. From the configuration of the country already described, it is evident, that the main drainage of Coorg is in an easterly direction towards the Bay of Bengal; while the mountain torrents of the western declivities of the Ghats flow into the Indian Ocean.

The Coorg rivers are not remarkable either for width or depth, but their water supply is everywhere abundant throughout the year. As their sources are high up in the mountains and their courses over steep declivities, the streams are impelled with great rapidity over generally very rocky beds; which render them almost wholly useless for navigation of any kind, and owing to the height of their banks and the unevenness of the country, few of them allow of artificial irrigation, but the rivulets are everywhere laid under contribution.

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

312 guna in the year Párthiva. This was written by Venkadasya
993 Mallia Bomarsia at the time of Basawalinga Déva Rája Voden."

The legend is shortly this: "A merchant Malla Shetty of Yelusávirashíme vowed to build this tank. When it was
[782] finished, there was no water forthcoming. Animal sacrifices were suggested by the tank diggers and offered, but in vain. In this distress the goddess Ganga appeared and demanded the little finger of the Shetti. Unwilling to make this sacrifice, he offered the life of Akkony, his daughter-in-law instead, whose husband was away on a journey. Akkony agreed, took an affectionate leave of her child and parents, who were ignorant of her intentions, and amidst great solemnities she stepped into the tank, when Ganga made her appearance in rushing water. Akkony's parents, hearing of the impending sacrifice, hastened to rescue their daughter, but she refused to leave the tank, uttered a curse upon her father and mother-in-law and disappeared in the rising water. She then appeared in a dream to her husband, who speedily returned home, and, on hearing what had happened, killed his parents, and with his child in his arms rushed to the tank and in despair threw himself into it, when both were graciously received by Ganga."

312 Besides the small public tanks, there are only private wells, that yield, if dug deep enough, everywhere sweet and clear water; but it appears, that the natives of Coorg do not bestow enough attention on the great blessing of wholesome water, and are often satisfied with the muddy contents of a hole, carelessly dug by the side of their paddy-fields, though from their own experience they assert, that most of their diseases are owing to the bad quality of their drinking water.

● 137 *Forests and their general flora and fauna.*—In Coorg extensive forests clothe every mountain range almost up to the summit and bamboo jungles, cover the more level eastern districts,

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

interspersed with such trees, as are peculiar to these localities. The flora of Coorg is almost identical with that of Southern India. It is of course beyond the scope of this Gazetteer and equally beyond the knowledge of the compiler, to attempt anything like a full description of the Coorg flora; we can only glance at its distinguishing features and enumerate a few species, that are of practical value, reserving those which fall under the care of the agri-horticulturist for a special consideration.

The first collection of Coorg plants appears to have been made by Captains Munroe and Gough, who probably placed their collections at the disposal of the famous botanist Dr. Wight. Mr. Metz, a German missionary on the Nilagiris, also collected a good many plants about Mercara, which were afterwards distributed in Germany by Hohenacker and named by Miquel. In Major Heber Drury's book on "Useful Plants" and Dr. Bidie's "Timber Trees of India" (1862) much information is given about the principal timber trees in Coorg.

Looking upon Coorg with the eye of the forester, rather than that of the general botanist, the most superficial survey will not fail to discover invaluable treasures of timber trees and their produce, scattered all over the province. Small as the country is, there are nevertheless distinct tracts with trees peculiar to them. The two prominent zones are by the Coorgs called Male-kádu or Hill-forests and Kanive-kádu or Hillock-jungles (Kanive, a ridge between paddy-fields, hillock). Botanically they may perhaps be determined as evergreen and deciduous forests, the former clothing the Ghats, the latter the eastern hill-tracts.

All along the slopes of the Ghats the Poon spar—"Calophyllum augustifolium"—rules as king of the forest. When full grown, it is often upwards of 100 feet in height, its wood is clean, tough and elastic and there is perhaps no other tree so well suited in every respect for making ship's spars and masts.

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

000 masts. By its side may be seen the black Dammer tree or
137 (*Can.*) Dúppa-mara (Canarium strictum) which attains a great
314 height and may be recognised at a distance by the peculiar red colour of its foliage. The resin obtained from this tree has a brilliant black lustre, when adhering to the ash colored bark, but when held up to the light, it is of a rich brownish yellow tint.

Another resin producing tree is the white Dammer tree (Vateria indica). When an incision is made into the bark of this tree and fire applied to it, the charred trunk yields an increased quantity of the fluid resin.

The Calophyllum inophyllum or Alexandrian Laurel supplies a fragrant resin, and from the seeds is extracted by pressure the Pinnay oil of commerce.

The beautiful order *Guttifera* is also frequently represented by at least 2 species. The *Garcinia pictoria* yields a very superior kind of gamboge, and the other species an inferior sort. The gamboge is obtained from the fruit of the tree by pressure and maceration. A very common tree of the dense forest is the wild cinnamon (Cinnamomum iners) the bark of the branches of which is supposed to form part of the Cassia bark of commerce.

137 The following trees are noted for the excellence of their
313 timber or other useful qualities: The Sampige—(Champak) Mi-
314 chelia champaca—with its beautiful and sweet scented flowers; the perfection of beauty in the poetical fancy of the Coorg bard, the Ebony—(Diospyros ebenaster) *Can.* Kari-mara, the Wood-oil tree (Dipterocarpus laevis), the Kanagala tree (Dillenia pentagyna), the Jack tree (Artocarpus integrifolius—*Can.* Halasina-mara). The Iron wood (mesua ferrea) with large white fragrant flowers and very hard wood; the Indian Mahogany or White Cedar (Cedrela toona—*Can.* Bellandi-mara), the Red Cedar or Chittagong wood (Chickrassia tabularis), the timber of both trees is little inferior to Mahogany; the wild

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

Nutmeg (Myristica); the wild Cashew-nut (Anacardium occidentale—*Can.* Géru-mara); the Indian Gutta tree (Isonandra acuminata), a large tree with beautiful foliage and oil yielding nuts; the Bastard Sago (Caryota urens—*Can.* Beini-mara) from which an agreeable toddy is drawn while from the pith sago may be prepared; the Hog-plum tree (Spondias mangifera—*Can.* Ambatte-mara); the wild clove tree (Eugenia).

A most remarkable and truly majestic forest tree is the Lepurandra Saccidora, which deserves to be classed with Thomson's

> "Lofty trees, to ancient song unknown,
> The noble sons of potent heat and floods
> Prone-rushing from the clouds."

It flowers in October in very peculiar catkins, something like a common mulberry. The fruit is in size and shape like a small fig, covered with a beautiful purple coloured down. The Coorgs manufacture very curious sacks from the bark. A branch is cut corresponding to the length and diameter of the sack wanted. It is soaked a little and then beaten with clubs until the liber separates from the wood. This done, the sack formed of the bark is turned inside out and pulled down close to the extremity, where the wood is cut off leaving a thin piece to form the bottom of the sack. These sacks were formerly much used for carrying rice, some of them may be seen in the Mysore Museum. Very different in size, but of far greater importance than the sack tree, is the Poison-nut tree,—"Strychnos nux vomica"—which may be found near it. The wood of this tree is hard and durable, its leaves oval and glossy; the small greenish white flowers appear in February; the fruit is of the size of an orange and in its white harmless pulp are embedded many round flat seeds, from which the powerful poison "Strychnine" is obtained. On open sunny woodsides grow Lobelia nicotianifolia, a stout annual plant with showy white flowers in terminal racemes,

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

137 and the Brambles: Rubus Lasiocarpus or country raspberry, R. Rugosus a scandent, prickly shrub and R. Wallichiana [245] which yields a delicious fruit. The Conocephalus nivens [314] appears here in great abundance, and proves a troublesome weed on some coffee plantations. Its stem yields a beautiful fibre much resembling that of the Rheea or China grass plant.

The forests in the Ghat region are so dense and tangled by thorny underwood and creepers, that they can only be penetrated by beaten paths and under the guidance of one familiar with their formidable mazes. The many densely shaded mountain rills and torrents are generally lined with a great variety of ferns, prominent amongst which is the stately *Tree fern*. In other places delicate reeds (Wotte) stud the more humid banks of streams. Stout ratans with terrible spines and slender flagelli lashing the air to keep, as it were, intruders at a distance, climb in all directions and surmount with their feathery leaves the highest trees. Favored by the constantly moist atmosphere the stems of many of the trees are speckled with lichens or covered with rare orchids, mosses, and other parasites especially the Mandali-parasite with its large glossy leaves, irregularly cut on one half of the limb. Festoons of wild pepper and gigantic creepers, which again support the more slender herbaceous vines of Convolvulus, Thimbergia,[1] Ipomoea, &c. stretch from tree to tree in the most fantastic interlacings and gorgeously decorate the grand timber trees verdant with their foliage and many hued flowers.

[134] The soil, almost everywhere covered with a humid rich stratum of vegetable mould, highly favors the growth of moisture-loving plants, such as the Indian Arrowroot (Curcuma angustifolia), the long rooted Turmeric (Curcuma longa), the Wild Ginger (Zingiber cassumunar) and especially the highly valued Cardamom.

Wherever the hills are denuded of forest, they are clothed

[1] [Errata. This should read "Thunbergia". See corrigenda sheet, Cat. 116, P. 493 — Analyst]

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

with a dense coarse grass, which at times greatly impedes their ascent. As the western forests are left and the eastern districts approached, many of the trees just enumerated are still met with, but added thereto others more characteristic of a drier climate. On entering into the more open country, there are found upon the grassy glades (Báné) smaller trees and shrubs, disposed with an artless grace, that the landscape gardener in vain seeks to imitate. Here spring and summer, in sweet embrace, hold perpetual sway, and the very air, so cool and fresh, seems imbued with life and health. 139

The aromatic Jasmine with its pure white flowers, the Coorg Rose in its rustic simplicity, the Gloriosa superba with its flaming corolla, the Melastoma malabathricum with its strange looking ribbed leaves and splendid mauve coloured flowers, the Coorg Lilac (Callicarpa Wallichiana) with its small red cymes of flowers, and the Adisia humilis with translucent rose coloured flowers, that look as if they had been cut out of a rare cornelian; these and many other flowering shrubs and herbs greet the eye here.

As we approach the Coorg houses, we come upon groves of Orange, Lime, Guava (Psidium pyriferum), Rose-apple (Jambosa vulgaris), Pomegranate, and clumps of Plantain trees, all of which thrive remarkably well. The Bastard Sago is much esteemed for its toddy and the Areca palm occasionally keeps its company, and their foliage, blended with the dense crown of the stately mango or jack tree, forms a beautiful back ground to the large paddy flats below. [245] [273]

We enter now upon the eastern or bamboo district of Coorg called Kanawé-kádu. The character of this district is indicated by the prevalence of large clumps of bamboo, interspersed with Blackwood, Matti, Hony, Teak, Sandal and other trees. Whoever had the good luck of seeing a Coorg bamboo jungle a few years ago when in its full vigour of growth, cannot have failed to be struck with the elegance and

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

137 beauty of its general appearance. Captain Basil Hall, who in 1813 entered Coorg from Mysore by way of Siddhapur and Virájpet, thus vividly describes his first impression of a pure bamboo jungle. "It seemed as if I were travelling among the clustered columns of some enormous and enchanted Gothic cathedral. . . . . The ground extended on all sides as smooth and flat and clear of underwood as if the whole had been paved with grave stones. From this level surface rose on every hand and, as far as the eye could penetrate into the forest, immense symmetrical clusters of bamboo, varying in diameter at their base from six feet to twenty or thirty, as I ascertained by actual measurement. For about 8 or 10 feet from the ground each of these clusters or columns preserved a form nearly cylindrical, after which they began gradually to swell outwards, each bamboo assuming for itself a graceful curve and rising to the height some of 60, some of 80 and some even of 100 feet in the air, the extreme end being at times horizontal or even drooping gently over, like the tips of the feathers in the Prince of Wales' plume. These gorgeous clusters stood at a distance of 15 or 20 yards from one another and, being totally free from the interruption of brushwood, could be distinguished at a great distance—more than a mile certainly, in every direction, forming under the influence of an active imagination naves and transepts, aisles and choirs, such as none but a Gothic architect ever dared to conceive . . . . . "

A view so grand would now, however, be sought for in vain. The whole of the Coorg bamboo jungles are in a state of decay after the periodical seeding during the last few years. This is a remarkable phenomenon, asserted by the natives, to take place once every 50 or 60 years, though not every where at the same time. In the north-east of Coorg the general seeding took place in 1860, and in the south-west in 1866 and 67, so that there is hardly a green bamboo left

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

in these jungles, but it is said, that on the western slopes of the Ghats the bamboos are still alive and in vigorous health. 137 • [539]

The Coorgs have a Canarese proverb:

"Arvattu warushake ondu katte,
Yeppattu warushake ondu yette."

which means:

"Once in 60 years the bamboos will decay,
Once in 70 years a famine may hold sway."

Lieutenant Connor in his "Coorg Survey" states it as a curious fact, that in 1817 in the whole of the district of Wynád there was scarcely a bamboo clump to be seen, that was not dead, dying or in blossom. Clumps of all ages growing contiguous to or far apart from each other were in the same condition. The same thing happened again there, as well as in Coorg, during the last few years, which occurrence would prove conclusively, that the bamboos, growing from seed and multiplying their reeds from the roots like the grasses, live for a period of about 50 years, when the whole clump with old and young reeds produces flowers and seeds and dies off the same year. From the seed a new progeny springs up, which grows very fast, but not, as has been supposed, to its whole length in one season. This is only true of such shoots as spring up from the main clump, after it has nearly reached maturity, which requires a growth of 12 years. These shoots, being armed at their extremity by a sharp, smooth hornlike cone, and without any lateral branches, force their way through the intricate mass of the parent reeds and contribute to the density, stability and stateliness of the whole clump, which may contain from 50 to 200 reeds. The several reeds are from 5 to 8 inches in diameter, jointed at every 12 or 15 inches, and hollow between the joints where thorny threepartite branches are alternately attached, of which the middle ones are strongest and make good walking sticks. The branches are repeatedly subdivided and present with their

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5
Yerava AW62
Kurumba AW56

C 137 delicate light green foliage of linear lanceolate leaves a most graceful feathery appearance. When in blossom the bamboo is leafless and the extremities are covered with flowers like one large compound panicle. The seed is in size and appearance like oats or small paddy. It is eaten by the poorer classes, but considered unwholesome. The birds and rats, however, revel in the feast of plenty. The water into which bamboo seed has largely fallen is said to be particularly noxious.

C [262] [735] [823]

Y K 313 The cutting of bamboo, is a difficult task that is rarely well done by any other than those expert jungle people, the Yerawas and Kurumbas. For the purpose of cutting a single reed they manage to climb over the lower thorny mass to where the reeds branch out freely about 10 or 15 feet above the ground and cut them at that height. To level the whole Y 313 clump, the Yerawa has to cut the stem of each bamboo below and above his head, removing each piece from the thorny embrace of the rest; he thus boldly advances into the clump, and the further he progresses in his work the greater is the danger of the whole clump suddenly giving way at the slightest breeze and crushing the unfortunate intruder.

C 137 There are several kinds of bamboo, the one described is, however, the most common. The reeds of another kind are much smaller and solid and are known by the name of Male-bamboos.

C 137 313 One of the handsomest trees in the eastern jungles is the *Blackwood* or Dalbergia latifolia with a stem of 2 or 3 feet in diameter and 60 to 80 feet in height. It is one of the most valuable timber trees in India and little, if at all, inferior to the South American Rosewood, which it closely resembles in many particulars. Near neighbours of Blackwood are *Matti* and *Hony*. The *Matti* or Terminalia coriacea is remarkable for its excellent timber, and is easily recognised by its thick ash-coloured bark, cracked into small tablets like the scales

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

of a crocodile. Under the knotty swellings of the bark of the Matti tree small quantities of water are hidden, which the lynx-eyed Kuruba readily discovers in his jungle-wanderings during the hot season and from which providential fountains he draws a thirst-quenching draft.[1] The *Hony* or Kino tree (Pterocarpus marsupium) yields an excellent yellowish timber fit for exposure and a valuable brownish gum, the kino, which oozes out from the wounded stem. Chunam brought in contact with it turns bright yellow. 137 313 [312]

Teak or Tectonia grandis occupies a distinct girdle along the eastern boundary of Coorg, within the basin of the Lakshmanatirtha and in Nanjarájpatna and Yélusávirashíme taluq; but, with the exception of the Amali-topu in Kiggatnád, the teak forests in Coorg are neither so dense, nor so stately as those in Burmah, where trees of enormous size and height are found. The large and strongly nerved leaves, rough above, whitish and downy beneath, and the numerous white flowers in terminal branches on the high and many branched trunk, mark the beauty and strength of the tree. Both for house and ship building teak is the best of woods, easily worked and almost indestructible by climate or insects owing to its oily nature. Coorg teak is of most excellent quality, oily and free of heart-shake. It is a Government monopoly and sold from wood-yards at the rate of 12 Annas per cubic foot. [655]

In close proximity to teak and in an equally limited tract of dry and elevated slopes grows the *White Sandal-wood*, (Santalum album) scattered between other trees and on cultivated land. It is rather a small tree of a more or less crooked stem, but its spreading branches with tiny, light-green leaves and yellow or purple coloured small flowers give it an elegant appearance and a marked feature in the landscape. The wood is close-grained and hard, especially the duramen or heart-wood, which for these qualities and for its agreeable scent is highly prized and employed for ornamental boxes, [322]

[1] [Errata: This should read "draught." See Corrigenda Sheet, Cat. 116, p. 473 — Analyst]

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

137 313 [322] [655] card cases, paper cutters, fans, walking sticks, etc. which are made chiefly in Nuggur and North Canara. Sandal-wood is also a Government monopoly and is collected at an expense of one eighth of the value of the wood, trees when from 16 to 40 years old according to the nature of the soil, where grown, are cut down; the best yield a billet of 5 inches square and 4 or 5 feet long. The wood fetches at the public auctions [652] [437] [439] periodically held by Government at the cotics or wood stores, from 70 to 98 Rupees per candy of 550 avoirdupois, and is generally exported to Bombay. Natives distinguish 3 kinds according to colour: the "red sandal" (sriganda) which is the most highly scented, the "yellow sandal" (arasana ganda), and the "white sandal" (bili ganda) which possesses but a faint 314 [302] aroma and is least prized. The chips are burnt as perfume, or reduced to powder which enters into the composition for [303] marking the foreheads of natives. The roots, containing the greatest amount of the essential oil, are chiefly used for its production. It is heavier than water and yields an excellent 245 perfume. The sandal tree is propagated from seed and suckers, springing up from the roots.

137 313 A stately though not very valuable tree all over these parts of the country is the *Wild Mango tree*, which towers with its lofty crown far above its humbler neighbours. But the giant of these jungles is the *Ajini* or *Wild Jack tree* (Artocarpus hirsuta), the timber of which is most useful for house and ship building. The rosy-tinted, smooth-barked *Ben-teak* or Nandi (Lagerstroemia parviflora) is reputed for its excellent timber.

137 314 A splendid jungle tree, when in flower in February and March, is the *Red Cotton tree* or Bombax Malabaricum a very large specimen, stands in front of the Anandapur Mission Church. Its flowers are large and of a deep red colour, and the many seeded capsules contain a silky cotton, which is employed for stuffing pillows and mattresses. The staple is

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

so short as to render this so-called cotton commercially valueless. The wood is soft and spongy and of little value. Another red cotton tree of smaller size and with a prickly trunk is the Salmalia Malabarica (*Can.* Mulu yelava). The Dindul or "Conocarpus latifolius" is a fine timber tree and very frequent in the deciduous jungles. The heart-wood is of a chocolate colour and exceedingly durable. The Kurubas use it for axe-handles. When burning it emits an intense and sustained heat and is therefore highly prized for lime kilns and distilleries. The *Hedde-mara* or "Nauclea cordifolia" yields a beautiful close-grained wood resembling box; but it cannot withstand exposure to damp. Its small yellow flowers appear in November and December. The "Rottleria tinctoria" furnishes an orange dye—the kapela ranga. The *Soap-nut tree* (sapindus) which is here rather common, produces a small fruit, the pulp of which is saponaceous and used by the natives for washing. For marking their cotton clothes the pure black acrid juice of the shell of the "marking nut" is used; it is the fruit of a tree about 50 feet high, the Semecarpus Anacardium. The native ink is chiefly manufactured with the fruit or galls of the Alali-mara and sulphate of iron. This tree, the Terminalia chebula, yields excellent galls produced by insects puncturing the tender leaves. The astringent nuts bruised and mixed with molasses and chunam produce a very strong mortar. They are also largley used for tannin purposes.

On the outskirts of bamboo jungles the *Indian Coral tree* (Erythrina Indica) with its brilliant scarlet flowers may be frequently found; its soft wood is much used for toys. On account of its prickly bark the branches make good fences, and where the betel vine is cultivated this tree offers an excellent support. A very pretty tree with spreading pinnate foliage and gooseberry like seeds is the *Nelli-kai-mara* or "Emblica Officinalis." The fruit though hard is welcome to many for its thirst assuaging properties. Sometimes it is Preserved in Sugar.

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

137 314 [386] preserved in sugar. The Bastard Teak (Butea frondosa), though common, is a very beautiful tree when in flower. Its scarlet flowers dye cotton yellow, and from the bark when cut a gum "Palas-kino" is obtained. A fragrant resin called "Kundricum" is furnished by the Gugula-mara (Boswellia glabra) an erect tall tree covered with greenish ash-coloured bark.

On the table-land of Mercara the Kake-mara or the Coorg Laburnum (Cathartocarpus fistula) is particularly conspicuous in April and May by its beautiful long pendulous racemes of [278] yellow flowers. Its long cylindric legumes of dark brown colour and nearly 2 feet in length contain a mucilaginous pulp, which is a valuable laxative when mixed with Cassia. 137 245 On the same plateau is found the American Aloe (Agave Americana) with its high flower stem and long thick leaves, which might be turned into excellent fibre, but beyond a few experiments no manufacture is carried on. The plant serves for making fences only. It has been superseded, however, by the Lantana shrub (Lantana Aculeata), which within a few years has spread over the whole of Coorg. Its square stem and branches are prickly, its ovate leaves when bruised have a strong smell of black currants, and its orange coloured flowers are more or less in blossom throughout the year, and the shrub when kept within proper bounds makes an excellent fence. But this plant whose vitality is most obstinate, threatens to overrun many a tract of land in Coorg and elsewhere that might be far more profitably occupied. The recognised necessity of shading exposed coffee plantations has 137 314 brought to notice a tree, chiefly distinguished for its quick growth and shady crown—the *Charcoal tree* (Sponea Wightii) It springs up spontaneously on every new clearing after the burn and mostly so in the eastern districts. Its wood produces a fine charcoal and its bark an excellent fibre. For beauty of shape and foliage the solitary *Nela-mávina-mara*

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(Xanthochymus pictorius?) forms a striking contrast to the former. Its branches commence near the ground, and covered with elongated dark green glossy leaves form as they ascend a gently inclined cone. The fruit of the size of an orange and beautifully yellow is rather acid, but it is eagerly sought after and eaten by the natives.

A graceful vegetable beauty of a different character is presented to view by the *Bilwára tree* (Mimosa) which with its spreading airy crown of tiny pinnate leaves and small white fragrant flowers is a graceful jungle ornament. The wood is very hard and strong. Near banks of streams and water courses the Coldera bush or *Fragrant Screwpine* (Pandanus odoratissimus) is commonly found and much used for making mats and umbrellas. In many arid places in the east and north of Coorg the *Dwarf date palm* (Phoenix farinifera) nearly monopolizes the ground. Its leaves are made into mats and baskets and from the small stem a farinaceous substance is prepared for food. A hillock of date palms before the hot season in January presents the appearance of, what we hope may be a thing of the past, a bored coffee estate.

At Frasерpet in the compound of the Coorg Superintendent's Bungalow there are a few trees of the valuable *Dividivi* or Shumach tree (Caesalpinia Coriaria). It is a small umbrageous tree and would do very well for coffee-shading, and its incurved oblong pods contain about 50 per cent of tannin, the price of which varies in Europe from £8 to £13 a ton, so that its cultivation might pay as a commercial enterprise.

Thus these eastern jungles contain a number of useful trees. I would now add a few trees, growing in the open, but thriving rea.....kably well in Coorg, viz: the several representatives of the Ficus tribe, especially the Banian tree (Ficus Indica), of which there are some beautiful specimens near

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● 137 Fraserpet to which the elegant lines of Southey so truly apply:—

"It was a goodly sight to see
That venerable tree.
For over the lawn irregularly spread,
Fifty straight columns propt its lofty head;
And many a long depending shoot,
Seeking to strike its root,
Straight like a plummet, grew towards the ground,
Some on the lower boughs, which crost their way,
Fixing their bearded fibres, round and round,
Some to the passing wind at times, with sway
Of gentle motion swang.
Others of younger growth, unmoved, were hung
Like stone drops from the cavern's frotted height.
Beneath was smooth and fair to sight,
Nor weeds nor briars deformed the natural floor
And through the leaf-cope which bower'd it over
Came gleams of checkered light.
So like a temple did it seem, that there
A pious heart's first impulse would be prayer."

(*The Curse of Kehama, Book* 13.)

The *Pippal* (Ficus religiosa) is likewise a large tree and found nearly in every temple in Coorg, but growing best in the drier districts. This tree proves most destructive to neglected buildings; when once rooted in crevices, nothing can with-
[262] stand its progress. More common than both preceding trees is the *Atti-mara* or "Ficus glomerata" with fruit much like the common fig and which is eaten by the natives. The *Indian Caoutchouc tree* "Ficus elastica" also occurs and is
[314] not only a useful but highly ornamental tree. The milky juice obtained from incisions into the bark is exposed to the air, when the *Caoutchouc* or elastic substance spontaneously separates, leaving a foetid whey-coloured liquid.

[655] Almost a stranger to Coorg and growing only in several places along the Kávéri between Fraserpet and Sómawarpet,

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is the *Tamaind tree* (Tamarindus Indica) which Government has reserved and partly made over without tax to certain Brahmins in Ramaswámy Kanawé, partly formed out on yearly rent. It is a stately tree and yields a dense shade, under which however, many plants do not grow and natives do not like to sleep. [137] [655] [513]

It would lead me too far to enter upon a description of the many shrubs, herbs and grasses of these jungles. Suffice it to say, that there are many and very beautiful ones, but most of them are annually swept away by the periodical fires, the purifying messengers of nature, that run through every jungle from February to April. These fires once established in the high coarse hill-grass rush madly in their onward career to the very tops of the mountains, and beautiful is the sight at night of these distant serpentine lines of flame extending over whole ranges of hills.

Coorg is rich in ferns and as these elegant plants will always attract the lover of nature, it may perhaps prove acceptable, if I append a list of such, as have been collected about Mercara and identified according to Major Beddon's work on Ferns by an enthusiastic admirer of these humble productions of nature:— [127]

Alphabetical list of Coorg ferns.

Names.	Where to be found.
Acrophorus immersus	On trees and at the foot of trees, near Ball-practice ground, Falls, etc. common.
Acrophorus pulcher	On trees and rocks; near Ball-practice ground; abundant almost anywhere.
Adiantum capillus veneris	In a well close to the Fort.
Do. caudatum	Near Ramaswámy Kanawé.
Do. hispidulum	Near Ball-practice ground, 3rd milestone, Bantiwappala Road.

[Errata: This should read "Tamarind", see Corrigenda sheet, Cat. 116, P. 493 -- Analyst]

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●137

Names.	Where to be found.
Adiantum lunulatum	Common everywhere.
Alsophila glabra	Road to Falls.
Alsophila latebrosa	Road to Falls, (common tree fern.)
Angiopteris evecta	Road to Falls, common in all moist places.
Aspidium polymorphum	Road to Falls, abundant in a deep hadanga.
Aspidium contractum	Same place as former one, also in a lane near 3rd milestone, Suntiecoppalu Road.
Asplenium contiguum	On trees between 1st and 2nd milestone, Mangalore Ghat.
Do. *falcatum*	On trees, Sapper Lines, Road to Falls.
Do. *formosum*	On trees, in a deep ditch near Race-course.
Do. *furcatum*	On trees, near Ball-practice ground; common.
Do. *heterocarpum*	In a hadanga on Road to Falls, in moist shady ravines.
Do. *planicaule*	Very common, on trees.
Do. *resectum*	Near 3rd milestone, Suntiecoppalu Road in a ravine, also on Road to Falls.
Do. *trapeziforme*	Near 3rd milestone, Suntiecoppalu Road, and in a ravine near Race-course.
Athyrium Hohenackerianum	Abundant on all banks during the monsoon.
Blechnum Orientale	Common everywhere.
Botrychium virginicum	On trees, at the foot of Prospect Point Hill on Road to Kalic-hâda.
Do. *Subcarneum*	Road connecting Cannanore and Mangalore at London Valley Estate.
Ceratopteris thalictroides	In a swamp in Mustoom Sahib's Estate, Nalknadd Road, 3 miles from Mercara.
Cheilanthes farinosa	Very common (silver fern).
Do. *tenuifolia*	3 miles out on Nalknadd Road, also Rajah's coal, generally in dry places.
Davallia bullata	5 miles out on Nalknadd Road, on road connecting Cannanore and Mangalore Ghats, grows on trees, pretty common.
Do. *teanifolia*	Common everywhere.
Diplazium dilatatum	On Road to Falls.
Do. *lasiopteris*	On Road to Falls; near Ball-practice ground.

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Names.	Where to be found.
Diplazium polypodioides	Between 1st and 2nd milestone Mangalore Ghat; quite a tree fern.
Do. sylvaticum	On Road to Falls.
Drymaria quercifolia	4 miles out on Nalknâd Road on trees.
Gleichenia dichotoma	Very common.
Goniopteris prolifera	Fish river, Kadar-kâdu Estate.
Gymnogramma leptophylla	Near 1st milestone Mangalore Ghat. On a bank on Road passing Government School.
Gymnopteris Feei	Muctoom Sahib's Estate, Nalknâd Road; on rocks, trees.
Hemionitis cordata	Very common on Santicoppala Road.
Lastrea aristata	Common on Road to Falls.
Do. cochleata	One of the very commonest ferns.
Do. falciloba	Very common.
Do. hirtipes	Near Nalknâd palace.
Do. membranifolia	Muctoom Sahib's Estate, Nalknâd Road.
Do. ochthodes	Very common.
Do. sparsa	Near Ball-practice ground; on Road to Falls.
Lygodium scandens	In a swamp 3 miles out on Nalknâd Road; 4 miles down Cannanore Ghat.
Microlepia polypodioides	In a ravine near 3rd milestone Mangalore Ghat.
Nephrodium abruptum	Muctoom Sahib's Estate, Nalknâd Road.
Do. molle	Very common.
Do. propinquum	Muctoom Sahib's Estate; also Annaiapar "Kumba Kolli" Estate.
Do. terminans	Abundant on Nalknâd Road.
Do. unitum	Muctoom Sahib's Estate.
Nephrolepis exaltata	A common wayside fern, in moist places.
Do. tuberosa	Near Rajah's seat; common.
Niphobolus porosus	Nalknâd Road on trees; rather common.
Oleandra neriiformis	On Nalknâd Road; on Road connecting Cannanore and Mangalore Ghats; on trees.
Ophioglossum reticulatum	On Ball-practice ground and in the Fort.
Do. pravipes	Near Kadan-kâdu on banks of Fish river.
Osmunda regalis	Abundant on banks of Fish river.
Pleocnemia aristata	Two miles beyond Hurnad bungalow.
Pteopeltis irioides	On trees and in bamboo clumps, Nalknâd Road.

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Names.	Where to be found.
● 137 *Pleopeltis membranacia*	3rd milestone Mangalore Ghat; abundant in moist, shady places, on trees.
Do. oxyloba	Abundant, on trees.
Do. phymatodes	On trees.
Do. wightiana	Very common.
Pæcilopteris contaminans	Falls
Do. terminans	Falls.
Polybotrya appendiculata	In ravines near May-male Estate; also Somwerpet Road.
Do. asplenifolia	Falls.
Polypodium ornatum	3rd milestone Mangalore Ghat; on Road to Falls.
Do. repulosum	Banks of stream near Post-Office; near Falls, etc, common.
Pteris aquilina	The commonest fern in Coorg.
Do. cretica	On Road to Falls, abundant.
Do. geraniifolia	Near 3rd milestone Santiooppalu Road; also near Ball-practice ground.
Do. longifolia	Abundant in and about the Fort.
Do. pellucens	Near Halkandd; also near May-male Estate, Bellamale Estate.
Do. pellucida	Common in all jungles about Mercara.
Do. quadriaurita	Very common.
Do. argentea and rubroneria	Varieties, both abundant especially the latter.
Sagenia coadunata	Very common.
Schizoloma ensifolium	At the top of the Falls, very abundant and handsome.
Do. heterophyllum	On Road to Falls; near Sepper Lines.
Do. nitens	Muctoom Sahib's Estate; has not been met with anywhere else as yet.
Trichomanes filicula	On trees near 3rd milestone Santiooppalu Ghat; Halkandd Road.
Do. rigidum	On the Bank of the stream that forms the Falls.
Vittaria elongata	On trees, Halkandd Road about 4 miles out on the right hand side.

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249 seedlings of 3 or 4 pairs of leaves are removed from the nursery with a ball of earth attached to the roots and transplanted into the holes marked by the pegs. This is the surest and therefore cheapest mode of planting.

Weeding is the next operation to be carefully attended to, but where from the nature of the soil or of the lay of the land there is danger of loss of surface soil from heavy rain, no hoe weeding is allowed during the monsoon; but only hand weeding or cutting with grass-knives and, after the monsoon, a breaking [491] up of the soil, to turn the weeds down. Easy roads are laid out to bring every part of the estate within ready access and at the same time to be the means of an effectual drainage.

[342] With the end of the first year's operations, the planter [361] very likely builds for himself a simple cottage on a convenient spot, that commands a fine view and some Bungalows are most beautifully situated. With the third year the estate comes into flower and bearing. In March or April the snowy white of the blossoms, in their copiousness but slightly relieved by the dark green foliage, delights the eyes with its morning freshness and purity, wherever you look, and in their bridal glory the jessamine-like flowers fill the air with an agreeable aroma. Let us examine a three years' old tree of best growth. 245 • 137 It is 4 feet high of a pyramidical shape with alternately opposite branches (primaries) of which the topmost are 8 inches and the lowest 3 feet long, which are subdivided by secondaries and tertiaries. The flowers are in appearance like jessamines on short stalks, in clusters round the branches and last but 2 days. The tree under examination numbers 20 pairs of branches, and 3 inches from the stem the clusters of flowers begin; the lowest branch contains 22, the middle 8 and the uppermost 2 clusters with an average of 12 blossoms each. These do not all set and produce mature berries, but give an idea of the fertility of the shrub. Gentle showers or heavy mists at this time greatly enhance the fecundity of

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

the blossoming, hence the importance of spring rains. The leaves are oblong, lanceolate, dark green and glossy on the upper, paler on the lower side and form a striking contrast with the snowy flowers or red berries. After a fertile blossoming the ovaries, if favoured by a few showers, swell rapidly and the green berries resemble olives. In October they become hard, turn yellow and, when mature, red. They now resemble cherries. We open one. A sweet aromatic succulent pulp encloses 2 beans, which are surrounded by a parchment like skin, which, when dry, easily drops off. A thin silky skin called the "silver-skin" is the last coating of the bean which, if of good quality, is long, of a bluish green colour and of a peculiar aroma. In some cherries there is but one bean developed which fills up the whole space. It is round and called Peaberry, and fancy assigns to it a higher price in the market than to ordinary coffee. 245 137

The separation of the fresh pulp from the beans is effected on the estate by a machine called "pulper," after which the parchment coffee is washed and slightly fermented to remove all saccharine and gummy matter, carefully dried and sent to the Coast, where it is peeled, garbled, sized, packed and shipped for the market. 245 [409]

Considering that every crop takes a certain amount of nourishment out of the soil, it is clear, that something in the shape of manure must be given to it in return, and it is generally acknowledged, that according to the chemical analysis of the coffee bean, the Coorg soil wants phosphate of lime, carbonate of magnesia and potash as the principal ingredients of the requisite manure, and a mixture of superphosphate of lime and Peruvian guano or stable-manure. Lime and ashes may be the nearest approach to it. Experiments with different proportions of these materials on a number of trees of equal growth soon show which is the most effectual mixture for each locality. 245 134 241 1/A

1/A [Errata: This should read "stable-manure," (comma) rather than "stable-manure." (period). See corrigenda, Cat. 116, p. 473--Analyst]

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

249 ment plantations all over India are likely to supply every possible local want.

Of the many species of chinchona the most generally cultivated is the "Chinchona Succirubra" or "Genuine Red Bark," which grows to a lofty tree and is rich in Alkaloids; but Mr. Broughton, the Government Quinologist on the Nilagiris, has lately discovered a species, which yields more than 11 per cent Alkaloids, and of these 10 per cent Quinine, the largest amount ever obtained from the Peruvian bark.

245 *Tea cultivation* has received but little attention. To judge from the experiments already made by Mr. Mann, Dr. Macpherson and Mr. Roberts, there is however no doubt, that tea will grow in Coorg.

249 *The cultivation of Sugarcane* is a purely native enterprise and chiefly in the hands of settlers from Mysore, who sell it for raw consumption or use it for the manufacture of jagry, a kind of coarse sugar. It is propagated from cuttings put down in April and yields ripe canes the year after in September. It requires a moist rich soil, that can be brought under irrigation. Some coffee planters have begun to stock their swampy ravines with sugarcane; but, the produce not being large enough, it is doubtful, whether it answers as a pecuniary speculation.

248 *Cotton* of a fair description has long been under cultivation to a small extent by ryots in the north-eastern parts of Coorg, where the fibre is used for home-made fabrics and the seed for oil. New species: the Sea-Island, New Orleans, Egyptian and Hybrid Cotton have lately been introduced as experiments and they thrive very well, but the sudden depression in the cotton market discourages any further pursuit of the speculation. [137]

The seed is sown in May on a well broken up rich soil, that is raised in long ridges 3 or 4 feet apart. The seedlings are sufficiently strong to withstand the heavy monsoon rains

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245 round the stalk, it forms a large bunch numbering from 200
[262] to 300 plantains. The fruit when divested of its skin may be
[251] eaten raw, roasted or baked, or when sliced and dried in the sun, reduced to a kind of flour which is considered very nourishing.

The fruit is supposed to have been the forbidden fruit of Paradise, hence the botanical name of the plant. There is a great variety of plantains, which differ in size, colour and the flavour of their fruit, but all the Coorg plantains seem to be particularly rich in saccharine matter and very nutritious.

[824] The plant is highly esteemed by the natives as the emblem of plenty and fertility and is as such in constant requisition at their marriage and other festivals for ornamenting the en-
[526] trance of houses and temples. Stumps of large trunks occupy also a conspicuous place in their games and amusements, for it is considered a feat of strength to cut one through at a blow with the famous Coorg knife.

248 The *Musa textilis* or "*Manilla Hemp*" Plantain has been
● 137 introduced by Captain Cole, and I have successfully naturalized it in Mercara. Numbers of shoots have already been distributed for extensive cultivation for the sake of its valuable fibre for cloth and paper-manufacture. The fruit is like the common large plantain, but so full of seeds that it can hardly be eaten.

Along with this plant also *the Rheea or Assam Nettle* (Boehmeria nivea) was introduced, and having successfully reared it in Mercara, I distributed a quantity of roots and cuttings amongst the planters all over Coorg, who find it thriving very well in their sheltered ravines without any further care, but do not yet see how to make the cultivation profitable, owing to the difficulty and expense in preparing the fibre. The plant is indigenous to south-eastern Asia and is known in China as Ma or Chuma and in Assam as Rheea. It is a herbaceous plant, with large, perennial, spreading and

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

much divided roots, from which rise a number of straight, slender, slightly branching stems from the bark of which the fibre is extracted. The leaves resemble those of the nettle, are light green on the surface and silvery white below but are not stinging. The male and female flowers being separate and situated on different parts of the stem, the production of seed is uncertain. 248 137

From data, given in the December number of the Calcutta Review 1854, the "Rheea" is propagated either by dividing the roots or by cuttings. The plant is exceedingly hardy and thrives in almost any description of soil, but to have it grown to perfection, the land must be well manured and capable of irrigation. In planting a piece of ground, the roots or cuttings should be placed out in rows a foot or a foot and a half apart each way, so that the plants do not throw out too many lateral shoots which impairs the height of the stems. When once the roots have firmly struck, the plant grows vigorously, but more especially during the rainy season. The first principal shoots burst from the centre of the root, and are quickly followed by exterior ones. In two months generally may be expected, especially upon well manured land, the first cuttings, which must be taken off about one inch above the root. It is essential to mind, that the plant does not become covered with hard or woody bark, which is indicated by the former green coating turning brown, the discoloration commencing at the stem. A little browning strengthens the fibre, too much imposes additional costly labour. It requires a little experience to ascertain clearly the requisite time for cutting. There is another criterion by which the fitness of the plant for cutting may be known, by passing the hand down it from the top to the bottom; if the leaves break off crisply from where they are joined to the stem, it is a good indication that the plantation may be thinned out. If, on the contrary, the plant be not ready, the leaves, instead of breaking, tear off and strip 248

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

ful tree, which requires a soil fit also for coffee, promises to prove a most welcome addition to Coorg exotics, as it produces fruit when 5 years old and requires but little care or labour. The plants are grown from seed, to be obtained in March, much in the same way as coffee seedlings, and after 15 months when they are about 18 inches high, they are transplanted in large pits about 12 feet apart and protected by shade. 245

The fact, that a wild species of Nutmeg grows plentifully in the Coorg forests induced me, to make an experiment with cultivating *the Nutmeg of commerce*, "Myristica officinalis," but the promised seed has not yet arrived. According to Dr. Bidie's instructions, the cultivation may be carried on on coffee-land and seems to offer no great difficultics. 137 •

Of *fruit trees* the *Coorg Oranges* are celebrated and as common as the plantain. There are several varieties, but the best is the sweet, luscious "Loose Jacket" so called because the rind of the ripe fruit is almost detached from the pulp. The Coorg Rajahs owned fine orange gardens in the most suitable localities of the country, but they have since been neglected. There are also varieties of Citrons and the Lime indispensable in Coorg etiquette is in abundance. 245

Apples and Pears do not succeed in Mercara, as the heavy monsoon does not favour their growth, but there is perhaps no reason, why they should not grow in warmer and more sheltered localities, as well as in Bangalore. Loquats, Peaches, Figs and Pomegranates thrive better and the Guava, which makes a most excellent jelly, would be the Coorg Pear, if it were not for the numerous hard little seeds and the peculiar flavor which is not always appreciated. Strawberries and Pine-apples grow to a large size. Grapes have been reared in sheltered places in Mercara, but the vine soon degenerates. The Brazil-cherry is very common, the fruit is the berry of a herbaceous plant and is made into excellent jam.

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

244 *English Vegetables* are satisfactorily grown by Mercara
●137 residents and still more so by some planters on their estates. Potatoes and Cabbage thrive remarkably well; also Peas, Beans, Knoll kohl, Salad, Beets, Turnips and Carrots of excellent quality are produced. The natives do now only attempt to cultivate these vegetables, but the markets are unsupplied with them.

244 *Native Vegetables*, which are reared on patches of paddy-fields after harvest time, or in small gardens, in the villages about Fraserpet, include: French Beans, Radishes, Pumpkins, Cucumbers, Indian Corn, Brinjals, Chillies, Coriander, Amaranthus and others, but even these are not plentiful in the Mercara market, and what there is comes chiefly from Fraserpet.

243 *Dry grain*, such as Ragy, Avary, Tavary, Huruli and others are chiefly grown in the open country of the Nanjarájpatna taluq lying along the western banks of the Kávéri. It is there also, that Tobacco is cultivated for sale, whilst in most of the Coorg farms little reserved patches of the narcotic is grown for home-consumption; but the Coorg tobacco is of an indifferent description, no particular care being bestowed upon its cultivation. The introduction of a new seed would
[248] have a beneficial influence. A few Hemp plants are here and
[296] there grown near native houses, but more for the use of smoking the intoxicating leaves, than for the sake of the fibre.

241 Similar to other hilly parts of India, there prevails a
243 primitive mode of cultivation called "kumari," which is practised by the lowest classes of natives, the Kurumbas and Kudias, chiefly on the western slopes of the Ghats. They cut and burn a patch of jungle, and plant either the small reddish hill-rice, sown broadcast upon the slightly dug up land, or Ragy. The former yields a 10 fold, the latter a 200 to 300 fold return. Such fields are only once or twice cultivated, when they are abandoned in favour of a new piece

4: Richter M, G-3 (ca. 1856-1870) 1870 AW5 Coorg AW5

and when offered, do not exert themselves to retain the boon. However, their wants are not overlooked, a new school will shortly be re-established in Gadinád. These people, who with the exception of the inhabitants of Surlabi-Muttunád behaved badly towards the English Government in 1837, are much under the influence of the Jangams residing in these Náds. There are two Mathas of note here, Mádapur and Abbi-matha, where the Shivácháries possess rich endowments.

The Kanavé-Hoblis are inhabited by a set of people identical with that of the adjoining Mysore ryots. They are chiefly cultivators of dry land and produce horse-gram, rági, various kinds of beans, tobacco, bangh, flax, sesamum and also cotton. The sandalwood tree grows extensively in this taluq. In Yedavanád some rice-fields which have a good water-supply yield two crops; there the wild sago-palm is also carefully attended to for the sake of the toddy drawn from it and for the farinaceous substance, prepared for food by the poorer classes from the inner part of the tree. Honey of the best quality is largely collected in June and much appreciated by the people. Near the village Beradi-kanavé there was the Back-stokade from which the northern column of the Coorg field-force was repulsed in 1834. (Bakka, *Kg.* door-way to a narrow passage.)

Fraserpet is the seat of the taluq and Nád-Kacheri of Nanjarájpatna and the monsoon Head-quarters of the Superintendent. It lies 20 miles to the east from Mercara on an elevation of 3,100 feet above the sea. Situated on the left bank of the river Kávéri in a bent formed by a sudden turn of the river, opposite the Mysore frontier, with which it is connected by a fine stone bridge, and the country, though open, being dotted by rounded grass or wood-clad hillocks on which the European houses are built, Fraserpet offers a most varied and pleasing landscape, especially from the travellers' bangalow, which occupies a rocky eminence, the site

4: Richter M, G-5 (ca. 1856-1870) 1870 AW5 Coorg AW5

And

such glorious forest trees of Poon, Sampige, Red Cedar Anjili, Hone, etc.! To see them and travel under their shade is worth a long journey. From Gunot to Cannanore or Tellicherry the road runs level and affords easy travelling. Near Ulil or Chávachári, 22 miles from Cannanore, a large wooden bridge resting on high stone pillars crosses the Gunot-river, but a public bangalow is only found at Shalot, 12¼ miles from Cannanore.

At the head of the Periambády Ghat a highroad branches off into Mysore by way of Bittangala 5 miles, Hattúr 3 miles, Tittimatti 9 miles, Anechaukur 4 miles, Panchally 6 miles, Honasur 11¼ miles, 4 miles from which place it meets the Mysore-Fraserpet road. Except between Anechaukur and Tittimatti the road is easy and generally in good condition, and since the Gonikoppa-bridge near Hattúr has been finished, at the sacrifice of the life of Mr. R. Hunter, a most promising Engineer Officer, there is no difficulty for wheeled carriages from Mysore to Cannanore, a distance of 113 miles. The public bangalows on this line are excellent in the Mysore country, but very indifferent in Coorg and Malabar.

To cut off two sides of a triangle a branch road, 3 miles long, has been constructed from Vírájpet to Bittangala for the Mysore cart-traffic. It is hoped, that the Mysore railway may yet extend to the eastern frontier of Coorg!

The *Northern highroad*, lately constructed by Mr. Stottard, connects Mercara with Manjerabad by way of Sómawárpet and Kodlipet, 44¼ miles to the latter town. The line having been laid out under stringent regulations in regard to gradient, and the trace receiving great attention by Capt. W. Campbell, the result is a road with uniformly the easiest gradients in the Province. Most of the roadway is 18 feet wide. The smaller streams are all bridged over; for the Choran-hole a three-arched masonry bridge of 65 feet is proposed; for the Mattapúr a single-arched, and for the Hatte-hole a three-

6:Spate N-4 (no date)1954 AWI India AWI
Kanada AW10
Coorg AW5

and trade have been N/S, or between the interior and the nearest accessible coast, not across the root of the Peninsula.

Structure has been described in Ch. I. We may note briefly the extraordinary maturity of the Peninsular rivers, graded almost to their heads in the Wn Ghats, but cutting through the En Hills or descending precipitously from the high Mysorean plateaus in gorges. The major relief features are usually no more than the flanks of plateaus or of fault-troughs, or residual crests on the heights of land between the main river-basins; but there is a good deal of local diversity, the mesas and buttes of the Deccan Lavas, the fantastic tors and gnarled ridges of the Archaeans.

Climatically the entire area, except for the En Hills, the Wn Ghats, and the rain-shadow of the latter, could be described as Tropical Savannah with monsoonal modification. There is a broad distinction between the NE, with 40 ins. plus and considerable humidity, and the drier (20–40 ins.) and more variable W and S, which in the lee of the Ghats receives less than 20 ins. in places.[1] The boundary between these is a line running roughly along the lower Godavari and produced to the NW. Temperatures practically everywhere range from means of 65–75° F. in January to 85–95° in May; except, of course, where modified by high altitude.

The Western Ghats and Coorg

The astonishing contrast between the scarp and the plateau faces of the Ghats is brought out by Fig. 125: on the one side deep ravines and canyons, on the other flat-topped spurs intersected by mature valleys. The spurs lose height to the E fairly rapidly, becoming mere flat-topped relic ridges on the watersheds, with outlying mesas and buttes; the actual dissected belt, the Ghats proper, is only a few miles wide as a rule; generally 2500–3000 ft high, it reaches 4500 or more in the culminations whence spring the transverse spurs, such as the Tryambak massif at the root of the Balaghat Hills. It is a negative area: in some places, as the Peint forests and the Dangs (S of the Tapti) and behind Ratnagiri and Goa, a tangle of dense jungle, including teak on terraces and valley-floors; elsewhere it carries more open forest with not a little bare rock on the flanks of the more massive lava flows. On spurs E and W are the great hill forts, bases whence the 'mountain rat' Sivaji gradually extended his power over the Konkan and the more open Maharashtra country. Except in the Kanara sub-region already discussed (pp. 617–26), there is little economic activity apart from jungle agriculture, forestry, and the increasingly important hydro-electric development around the Bhor Ghat and Gersoppa. The only places of much importance are the little gap towns and sanatoria behind Bombay (Igatpuri, Lonavla, Khandala; above, 616–17) and Mahabaleshwar (5000), a hill-

[1] For a more detailed analysis see E. Simkins, *The Agricultural Geography of the Deccan Plateau of India* (n.d., ?1926), 13–22.

6:Spate N-4 (no date)1954 AWI India
Kanada AWID
Coorg AWS
Tamil AWI6

[Fig. 125 (a)] GHATS SECTION

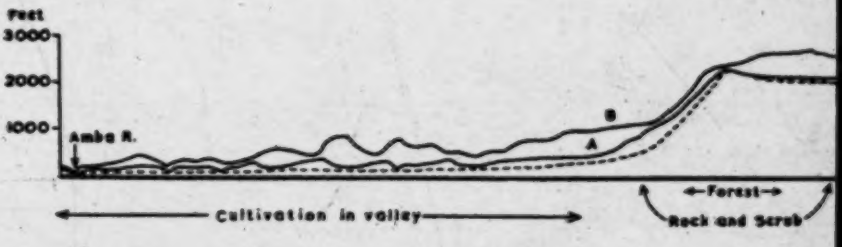

Fig. 125.—Section across the Ghats. The scarp is here 32 mls WNW of Poona, 8 interfluve 1 ml N of A; C, crest of spur between Pauna R. and Lonavla. Note that Pauna from SOI 47F/6; vertical exaggtn 2·1.

station at 4000–5000 ft, used by Bombay officials. Its excessive rainfall (260 ins.) gives it a short season; Panchgani, only 12 miles E, receives no more than 60 ins. and has a less fluctuating population, receiving not only some of the hot-weather exodus from the plains, but a rains exodus from Mahabaleshwar itself.

Farther S the dissected belt is higher and wider in the coulisses of Coorg, around the Cauvery headwaters; some points in the girdle of ranges on the N, W, and S reach over 5500 ft. Most of Coorg was originally evergreen forest and bamboo jungle, with some parkland to the E. The average annual temperature is only 60° F., humidity high, rainfall at the capital, Mercara, 133 ins. Of the million acres of Coorg a third are forested and nearly a third cultivated, though of that about half is generally fallow. Rice accounts for 56% of the cropped area, coffee about 30%. The little State (1593 sq mls, 1951 poptn 229,405) is inhabited by a remarkably sturdy peasantry, with their own language (Kodalu): isolated, perhaps fortunately, from the main currents of Indian life, they half-cultivate half-gather cardamoms, collect wax and honey, and hunt, to supplement the product of their paddy-fields: it is typical that even the backbreaking labour of transplanting paddy seedlings ends in a race.[1] The Wynaad Plateau links Coorg with the great boss of the Nilgiris; the tea and coffee plantations of the plateaus extend down the slopes into Malabar, where Mangalore and Calicut are the main outlets.

The Southern Blocks

On either side the Palghat Gap is dominated by the highest mountains of the Peninsula, Nilgiris to the N and the Anaimalai-Palni-Cardamoms

[1] For a full and interesting, if disjointed, account of Coorg see L. A. Krishna Iyer, "Coorg Ethnology" (*JGJ* XXII (1947), 157–225).